Assignment 6

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Use this data attachment for solving the question:

Data for Surface Area

1. Relate the measurement of particle size distribution using laser diffraction depends on:
   - Sample concentration
   - Refractive index of dispersant medium
   - Measuring time
   - No, the answer is incorrect. Answer: True
   - Assessed Answers: Sample concentration, Refractive index of dispersant medium
   - 3 points

2. Micrometeral value reduces the intensity of X-ray diffraction beam. The effect of micromembranes is reduced when:
   - Sample is fine ground
   - Sample is removed finely
   - Sample has the grains of equal absorption coefficient
   - Sample is measured for short duration
   - No, the answer is incorrect. Answer: True
   - Assessed Answers: Sample is removed finely
   - 3 points

3. Which of the following methods is used for the removal of water from Portland cement paste?
   - Oven drying
   - Freeze drying
   - Vacuum drying
   - No, the answer is incorrect. Answer: True
   - Assessed Answers: Vacuum drying
   - 3 points

4. Refractive index of sample and dispersant medium are required for reliable measurement of particle size distribution using laser diffraction
   - True
   - Assessed Answers: True
   - 3 points

5. If the volume of H₂ gas required for nitrocellulose formation is V in a gas adsorption experiment. Which of the following expressions can be used to determine the surface area of sample? (Note: V_n₂, N₂, Area of surface occupied for a single adsorbed gas molecule N₂, the molar mass of N₂.
   - \( V = \frac{SR_n}{0.082} \)
   - No, the answer is incorrect. Answer: True
   - Assessed Answers: True
   - 3 points

6. Mung absorption theory relies on _____ adsorption of gas molecules on the surface of particles.
   - Physical
   - Chemical
   - Other
   - No, the answer is incorrect. Answer: Other
   - Assessed Answers: Other
   - 3 points

7. The data obtained from a N₂ adsorption-desorption test is presented in the data sheet with the value of relative pressure (p/p₀) and the corresponding quantity (g/m²) of N₂ adsorbed at that relative pressure. Use the BET equation to determine the surface area of the sample
   - Identify the type of isotherm based on the Lupac classification
   - Type I, Type II, Type III
   - No, the answer is incorrect. Answer: Type II
   - Assessed Answers: Type II
   - 3 points

8. The slope of the curve obtained in the linear form of BET
   - No, the answer is incorrect. Answer: Slope I
   - Assessed Answers: Slope I, Slope II
   - 3 points

9. The intercept of the curve obtained in the linear form of BET
   - No, the answer is incorrect. Answer: Slope II
   - Assessed Answers: Slope II, Slope III
   - 3 points

10. The surface area of the sample (m²/g)
    - No, the answer is incorrect. Answer: 0.001 m²/g
    - Assessed Answers: 0.001 m²/g
    - 3 points